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CHECK LIST OF SCIENTIFIC NAMES OF INTRODUCED AGRICULTURAL GRASSES.

I. TRIBE TRITICEAE (HORDEAE)

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CHECK LIST OF SCIENTIFIC NAMES OF INTRODUCED AGRICULTURAL GRASSES.

I. TRIBE TRITICEAE (HORDEAE)

by

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This list is intended to provide nomenclaturally correct names for grasses of actual or potential agricultural importance in the United States. Foreign and native species introduced or tested by the U.S. Department of Agriculture are included in the list. Some additional species and certain intergeneric hybrids are also included for the sake of completeness.

The list is not a roster of available species but only an aid in choosing the correct scientific name when dealing with grasses of the important tribe Triticeae. The taxonomic treatments accepted for this report are subject to further clarification and improvement, especially as much more taxonomic study needs to be carried out on members of the tribe. The purpose here is to make available correct nomenclature rather than to pass taxonomic judgments: for example, a number of species names are listed under Triticum but it is very doubtful that all names represent "good" species.

The name Triticeae for this tribe of grasses was published before publication of the name Hordeae; therefore, the former name must be used according to the International Rules of Botanical Nomenclature.

Geographic regions following species names indicate the native range of a species. Palestine includes Israel and Jordan. Abbreviations and symbols are as follows:

~~~~~ indicates a correct name.
_____ indicates a synonym.
X before name designates a name for a hybrid; between names it indicates hybridization between parental species.
cult. species known only in cultivation, not in the wild.
dipl. diploid chromosome level.
hex. hexaploid.
tetr. tetraploid.
~~~~~

Aegilops. The taxonomy of this genus remains controversial, both as to generic relationships and species limits. Bowden 1959 1/ included the genus under Triticum, but until this procedure is generally agreed on, it is more useful to maintain Aegilops as a separate genus.

Aegilops

aucheri Boiss. (A. speltoides)

bicornis (Forsk.) Jaub. & Spach --- Palestine, northern Egypt

biuncialis Vis. (A. lorentii)

caudata L. --- Greece, Turkey

columnaris Zhuk. --- Turkey

comosa Sibth. & Sm. --- Greece, Turkey

crassa Boiss. --- Palestine to central Asia

cylindrica Host --- southern Europe to southwestern & central Asia

juvenalis (Thell.) Eig --- southwestern & central Asia

kotschyi Boiss. --- North Africa to central Asia

ligustica (Savign.) Coss. (incl. in A. speltoides by Bowden 1959).

longissima Schweinf. & Muschl. --- Palestine, northern Egypt

lorentii Hochst. --- Mediterranean to southwestern Asia

macrochaeta Shuttl. & Huet ex Duval-Jouve (A. lorentii)

mutica Boiss. (Amblyopyrum muticum)

ovata L. --- Mediterranean to Palestine, Turkey

peregrina (Hack.) Maire & Weill. --- southeastern Europe to southwestern Asia, North Africa

sharonensis Eig (allied or conspecific with A. longissima) --- Palestine

speltoides Tausch --- Asia Minor, Iran

squarrosa L. (A. tauschii, according to Bor 1968)

tauschii Coss. --- southwestern & central Asia

triaristata Willd. --- Mediterranean to southwestern Asia

tripsacoides Jaub. & Spach (Amblyopyrum muticum)

triuncialis L. --- Mediterranean to southwestern & central Asia

turcomanica Roshev. (?A. juvenalis) --- southwestern & central Asia

umbellulata Zhuk. --- Turkey to southwestern Asia

1/ See Main Works Consulted, p. 16.

Aegilops (continued)

uniaristata Vis. --- Yugoslavia
variabilis Eig (A. peregrina)
ventricosa Tausch --- western Mediterranean

X Aegilotrichum (Aegilops X Triticum)

X Agroelymus (Agropyron X Elymus)

X Agrohordeum (Agropyron X Hordeum)
macounii (Vasey) Lepage (Elymus macounii Vasey) (Agropyron trachycaulum X Hordeum jubatum)

Agropyron. Taxonomy and nomenclature of North American species as revised by Bowden 1965.

Agropyron

acutum (DC.) Roem. & Schult. (A. X obtusiusculum)
alaskanum Scribn. & Merr. (A. violaceum)
albicans Scribn. & Smith --- western U.S.
aucheri Boiss. (A. intermedium var. trichophorum)
brachyphyllum Boiss. & Hausskn. --- Iran
buonapartis (Spreng.) Dur. & Schinz (Eremopyrum bonaepartis)
caespitosum C. Koch --- southwestern Asia
caninum (L.) Beauv. --- Europe, Asia
chinense (Trin. ex Bunge) Ohwi --- eastern Asia
ciliare (Trin. ex Bunge) Franch. --- Asia
ciliatiflorum Roshev. --- Iran
cristatum (L.) Gaertn. --- central & eastern Europe, Asia
dagnae Grossh. (A. pectiniforme)
dasyanthum Ledeb. --- U.S.S.R.
dasystachyum (Hook.) Scribn. (including A. elmeri Scribn.)
var. dasystachyum --- western U.S. & Canada
var. riparium (Scribn. & Smith) Bowden (A. riparium Scribn. & Smith) --- western U.S. & Canada
dentatum Hook. f. --- Himalayas, Tibet

desertorum (Fisch. ex Link) Schult. --- eastern Europe, Asia
  istans C. Koch (Eremopyrum distans)
divaricatum Boiss. & Bal. --- Turkey
elmeri Scribn. (A. dasystachyum)
elongatum (Host) Beauv. --- southeastern Europe, southwestern Asia
enysii T. Kirk --- New Zealand
gmelinii (Griseb.) Scribn. & Smith (authority for name uncertain)
  --- eastern Asia
imbricatum (Bieb.) Roem. & Schult. --- Europe, Asia
inerme (Scribn. & Smith) Rydb. (A. spicatum forma inerme)
intermedium (Host) Beauv.
  var. intermedium --- Europe, Asia
  var. trichophorum (Link) Halac. --- Europe, Asia
junceiforme (A. & D. Löve) A. & D. Löve --- coasts of western Europe
junceum (L.) Beauv. --- coasts of Europe, Asia Minor
junceum (L.) Beauv. subsp. boreoatlanticum Sim. & Guin. (A. junceiforme)
kosaninii Nabel. --- southwestern Asia
kuramense Meld. --- Afghanistan
latiglume (Scribn. & Smith) Rydb. (A. violaceum)
leptourum (Nevski) Grossh. --- southwestern & central Asia
libanoticum Hack. --- Lebanon, Iran
littorale (Host) Dum. (A. pungens)
lolioides (Kar. & Kir.) Roshev. --- U.S.S.R.
longearistatum (Boiss.) Boiss. --- Iran
mayebaranum Honda --- Japan
multiflorum (Banks & Soland. ex Hook. f.) T. Kirk ex Cheeseman
  var. longisetum Hack. ex Cheeseman --- New Zealand
X obtusiusculum Lange (A. junceiforme X A. pungens) --- western Europe
orientale (L.) Roem. & Schult. (Eremopyrum orientale)
panormitanum Parl. (Author citation according to Bor 1968).
  (Roegneria panormitana (Parl.) Nevski)--- Europe, Asia
patagonicum (Speg.) Parodi --- Argentina
pauciflorum (Schwein.) Hitchc. (A. trachycaulum)
pectiniforme Roem. & Schult. --- Europe, Asia

podperae Nabel. --- Iran, Turkey
prostratum (L.f.) Beauv. (Eremopyrum triticeum)
X pseudorepens Scribn. & Smith (A. dasystachyum X A. trachycaulum)
--- western U.S. & Canada
pungens (Pers.) Roem. & Schult. --- coasts of western & southern Europe
rechingeri Runemark (Elymus rechingeri)
remotiflorum Parodi --- Argentina
repens (L.) Beauv. --- Europe, Asia; naturalized in North America
riparium Scribn. & Smith (A. dasystachyum var. riparium)
scabriglume (Hack.) Parodi --- Argentina
scabrum (Labill.) Beauv. --- Australia, New Zealand
semicostatum (Nees ex Steud.) Boiss. --- Afghanistan, Himalayas
sibiricum (Willd.) Beauv. --- Asia
smithii Rydb. --- western & midwestern U.S. & Canada
spicatum (Pursh) Scribn. & Smith --- western U.S. & Canada
forma spicatum
forma inerme (Scribn. & Smith) Beetle (A. inerme (Scribn. & Smith) Rydb.)
squarrosum (Roth) Link (Eremopyrum bonaepartis)
striatum (Nees ex Steud.) Hook. f. --- Afghanistan, northwestern India, central Asia
strigosum (Bieb.) Boiss. --- U.S.S.R.: Crimea
subsecundum (Link) Hitchc. (A. trachycaulum var. unilaterale)
tenerum Vasey (A. trachycaulum)
trachycaulum (Link) Malte ex H. F. Lewis
var. trachycaulum --- U.S. (except Southeast) & Canada
var. unilaterale (Cassidy) Malte (A. subsecundum (Link) Hitchc.)
--- U.S. (except Southeast) & Canada
trichophorum (Link) Richt. (A. intermedium var. trichophorum)
triticeum Gaertn. (Eremopyrum triticeum)
tsukushiense (Honda) Ohwi --- Japan
ugamicum Drob. --- central Asia
violaceum (Hornem.) Lange --- Greenland, Alaska, western U.S. & Canada; Norway & Sweden
yezoense Honda --- Japan

X Agrositanion (Agropyron X Sitanion)

Amblyopyrum muticum (Boiss.) Eig (Aegilops mutica Boiss.) --- Turkey

eurolepidium (Elymus, in part)

angustum (Trin.) Nevski (Elymus angustus)

dasystachys (Trin.) Nevski (E. dasystachys)

multicaule (Kar. & Kir.) Nevski (E. multicaulis)

paboanum (Claus) Nevski (E. paboanus)

Clinelymus (Elymus)

dahuricus (Turcz. ex Griseb.) Nevski (Elymus dahuricus)

excelsus (Turcz.) Nevski (E. excelsus)

nutans (Griseb.) Nevski (E. nutans)

sibiricus (L.) Nevski (E. sibiricus)

Cuviera europaea (L.) Koeler (Hordelymus europaeus)

X Elyhordeum (Elymus X Hordeum)

montanense (Scribn.) Pohl (E. virginicus X H. jubatum) --- North America

X Elymopyrum (X Agroelymus)

X Elymordeum (X Elyhordeum, the earliest name)

Elymus

agropyroides Presl --- southern South America

andinus Trin. (E. angulatus)

angulatus Presl --- South America

angustus Trin. --- eastern Europe, Asia

antarcticus Hook. f. --- southern South America

aralensis Regel (E. multicaulis)

arenarius L. --- northern Europe

arenarius var. mollis (Trin.) Koidz. (E. mollis)

Elymus (continued)

canadensis L. --- North America

caput-medusae L. (Taeniatherum sp. or spp.)

carolinianus Walt. (E. virginicus)

chinensis (Trin.) Keng (Agropyron chinense)

cinereus Scribn. & Merr. --- North America

condensatus Presl --- U.S.A.: California

crinitus Schreb. (Taeniatherum crinitum)

dahuricus Turcz. ex Griseb. --- Asia

dasystachys Trin. --- Asia

desertorum Kar. & Kir. (E. junceus)

erianthus R. Phil. --- Argentina

europaeus L. (Hordelymus europaeus)

excelsus Turcz. ex Griseb. --- eastern Asia

fragilis (Boiss.) Griseb. (Psathyrostachys fragilis) (Hordeum fragile Boiss.)

giganteus Vahl --- eastern Europe, Asia

glaucus Buckl. --- North America

hirsutiglumis Scribn. (E. virginicus var. intermedius)

innovatus Beal --- North America

junceus Fisch. --- eastern Europe, Asia

macounii Vasey (X Agrohordeum macounii)

mollis Trin. --- eastern Asia, North America, northern Atlantic

multicaulis Kar. & Kir. (Aneurolepidium multicaule (Kar. & Kir.) Nevski) --- central Asia, European U.S.S.R.

nutans Griseb. --- Asia

paboanus Claus (Aneurolepidium paboanum (Claus) Nevski) --- eastern Europe, Asia

pacificus Gould --- U.S.A.: California

patagonicus Speg. --- southern South America

philadelphicus L. (E. canadensis)

pilifer Banks & Soland. ex Russ. (Heteranthelium piliferum)

Elymus (continued)

propinquus Fresen. ex Steud. (E. villosus)

rechingeri (Runemark) Runemark (Agropyron rechingeri Runemark)
--- Greece, Egypt

sabulosus Bieb. (E. giganteus)

sibiricus L. --- eastern Europe, Asia, northwestern North America

triticoides Buckl. --- North America

villosus Muhl. ex Willd. --- North America

virginicus L. --- North America
var. intermedius (Vasey) Bush
var. submuticus Hook.

X Elysitanion (Elymus X Sitanion)

Elytrigia (Agropyron)

repens (L.) Desv. ex Nevski (Agropyron repens)

Eremopyrum. A genus segregated from Agropyron. Four annual species native to eastern Mediterranean, southwestern and central Asia. Nomenclature and taxonomy below influenced by Bowden 1962.

Eremopyrum

bonaepartis (Spreng.) Nevski (Bowden 1962 states that this spelling is correct, not "buonapartis"; the original spelling must be followed according to the International Rules of Botanical Nomenclature).
forma bonaepartis --- eastern Mediterranean, southwestern & central Asia
forma hirsutum (Bertol.) Bowden --- southwestern & central Asia

buonapartis var. sublanuginosum (Drob.) Meld.
(E. bonaepartis f. hirsutum)

distans (C. Koch) Nevski --- southwestern & central Asia

hirsutum (Bertol.) Nevski (E. bonaepartis f. hirsutum)

orientale (L.) Jaub. & Spach --- Mediterranean & southeastern Europe, southwestern Asia to Siberia

squarrosum (Roth) Jaub. & Spach (E. bonaepartis)

triticeum (Gaertn.) Nevski --- southwestern & central Asia; established western Canada & northwestern U.S.

Haynaldia

villosa (L.) Schur --- Mediterranean, southern Europe to southwestern Asia

Heteranthelium piliferum (Banks & Soland. ex Russ.) Hochst. --- Asia

Hordelymus europaeus (L.) Harz (not intergeneric hybrids)
--- Europe, southwestern Asia, northwestern Africa

X Hordeopyrum (X Agrohordeum)

Hordeum. It is doubtful that the following are "good" species: H. aegiceras, H. agriocrithon, H. deficiens, H. distichon, H. irregulare, H. spontaneum; however, they are tentatively listed below as recognized species.

Hordeum

aegiceras Nees ex Royle --- Asia

agriocrithon Åberg --- Asia

andicola Griseb. --- South America

arizonicum Covas --- western U.S.

bogdanii Wilensky --- Europe, Asia

boreale Scribn. & Smith (H. brachyantherum)

brachyantherum Nevski --- Asia, North America

brachyatherum R. Phil. --- South America

brevisubulatum (Trin.) Link --- Asia

bulbosum L. --- Europe, Asia

X caespitosum Scribn. (H. brachyantherum X H. jubatum)
western North America

californicum Covas & Stebbins --- western U.S.

capense Thunb. --- Republic of South Africa

chilense Roem. & Schult. --- South America

comosum Presl --- South America

compressum Griseb. --- South America

deficiens Steud. ex A. Braun --- Asia (?)

depressum (Scribn. & Smith) Rydb. --- western U.S. & Canada

distichon L. --- Europe, Asia, Africa

distichum L. (H. distichon)

euclaston Steud. --- South America

fragile Boiss. (Psathyrostachys fragilis)

geniculatum All. --- Europe, Asia

Hordeum (continued)

glaucum Steud. --- Europe, Asia
gussoneanum Parl. (H. geniculatum)
halophilum Griseb. --- South America
hexaploidum Covas (H. procerum)
hexastichon L. (H. vulgare)
hystrix Roth (H. geniculatum)
irregulare Aberg & Wiebe --- Asia
ithaburense Boiss. (H. spontaneum)
jubatum L. --- North America, Asia
subsp. breviaristatum Bowden (H. brachyantherum)
var. caespitosum (Scribn.) Hitchc. (H. X caespitosum)
subsp. X intermedium Bowden (H. X caespitosum)
lechleri (Steud.) Schenck --- South America
leporinum Link --- Europe, Asia
marinum Huds. --- Europe, Asia, North Africa
maritimum With. (H. marinum)
montanense Scribn. (X Elyhordeum montanense)
murinum L. --- Europe, Asia
muticum Presl --- South America
nevskianum Bowden --- Asia
nodosum L. (H. secalinum)
pammelii Scribn. & Ball (X Elyhordeum montanense)
parodii Covas --- South America
polystichon Hall. (H. vulgare)
pratense Huds. (H. secalinum)
procerum Nevski --- South America
pubiflorum Hook. f. --- South America
pusillum Nutt. --- North & South America
roshevitzii Bowden --- Asia
sativum Pers. (H. vulgare)
secalinum Schreb. --- Europe, North Africa

Hordeum (continued)

sibiricum Roshev. (H. roshevitzii)
spontaneum C. Koch --- Europe (?), Asia, North Africa
stebbinsii Covas (H. glaucum)
stenostachys Godr. --- South America
tetraploideum Covas --- South America
tetrastichum Koern. (H. vulgare)
turkestanicum Nevski --- Asia
violaceum Boiss. & Hohen. ex Boiss. --- Asia
vulgare L. (Common Barley) --- Asia, Europe (?); cult. worldwide.
subsp. spontaneum (K. Koch) Thell. (H. spontaneum)
forma agriocrithon (Åberg) Bowden (H. agriocrithon)
var. aegiceras (Nees ex Royle) Aitch. (H. aegiceras)

Psathyrostachys fragilis (Boiss.) Nevski --- southwestern Asia
(This genus accepted as distinct by Bor 1968.)

Roegneria (Agropyron)
panormitanum (Parl.) Nevski (A. panormitanum)

Secale. At least four additional species have been described and treated more or less seriously in taxonomic or evolutionary studies. About half of the names listed below are probably not "good" species (see Khush 1962, 1963). S. afghanicum, S. ancestrale, and S. silvestre have not apparently been introduced by the USDA.

Secale
afghanicum (Vav.) Roshev. --- Afghanistan
africanum Stapf --- Republic of South Africa
anatolicum Boiss. --- southeastern Europe, southwestern Asia
ancestrale (Zhuk.) Zhuk. --- southwestern Asia (?)
cereale L. (Common Rye) --- Asia, Europe (?); cult. worldwide
subsp. ancestrale Zhuk. (S. ancestrale)
subsp. segetale Zhuk. (S. segetale)
kuprijanovii Grossh. --- southwestern Asia
montanum Guss. --- Mediterranean to central Asia
segetale (Zhuk.) Roshev. --- southwestern Asia (?)

Secale (continued)

silvestre Host --- southern Europe to central Asia & western Siberia

vavilovii Grossh. --- southwestern Asia

Sitanion. A small genus of four perennial species in western North America. Recent publications: Bowden 1962, Wilson 1963.

Sitanion hystrix (Nutt.) J. G. Smith --- west & midwestern North America

X Sitordeum (Sitanion X Hordeum)

Taeniatherum. A small genus of annual species formerly included in Elymus.

Taeniatherum

asperum (Simonkai) Nevski --- central Europe to central & southwestern Asia

crinitum (Schreb.) Nevski --- central Europe to central & southwestern Asia

X Triticosecale (Secale X Triticum) (Triticale is to be used only as the common name)

Triticum. Species names under Triticum are merely listed; most of the so-called species are not "good" species according to Bowden 1959. Varieties and cultivars, especially of T. aestivum, are omitted. The names and authorities used here are generally according to Bowden 1959. Common names for well-known species are in parentheses. Also listed are the ploidy levels.

Triticum

abyssinicum (Vav.) Flaksb. (T. aethiopicum)

aegilopoides (Link) Bal. (an illegitimate name; T. boeoticum)

aegilops Beauv. ex Roem. & Schult. (Aegilops tauschii)

aestivum L. (T. vulgare Vill.) (Common wheat, bread wheat) --- hex. --- cult.

aethiopicum Jakubz. --- Tetr. --- cult.

araraticum Jakubz. --- Tetr. --- southwestern Asia

armeniacum (Jakubz.) Mukush. (T. araraticum)

armeniacum (Stolet.) Nevski (? T. dicoccon)

boeoticum Boiss. --- Dipl. --- southeastern Europe, southwestern Asia (included in T. monococcum by Bowden 1959)

carthlicum Nevski --- Tetr. --- cult.

compactum Host (Club wheat) --- Hex. --- cult.

Triticum (continued)

dicoccoides (Koern. ex Asch. & Graebn.) Aaronsohn (Wild emmer)
--- Tetr. --- eastern Mediterranean to Iran

dicoccon Schrank (Emmer) --- Tetr. --- cult.

dicoccum Schrank (T. dicoccon, the correct and original spelling according to Bowden 1959)

dicoccum Schuebl. (T. dicoccon Schrank)

durum Desf. (Durum wheat) --- Tetr. --- cult.

macha Dek. & Men. --- Hex. --- cult.

monococcum L. (Einkorn) --- Dipl. --- southeastern Europe, southwestern Asia

orientale Perc. (T. turanicum)

palaeocolchicum Men. --- Tetr. --- cult.

persicum (Boiss.) Aitch. & Hemsl. (validity of this name uncertain) (not T. carthlicum)

persicum Vav. ex Zhuk. (T. carthlicum)

polonicum L. (Polish wheat) --- Tetr. --- cult.

pyramidale Perc. (T. durum)

sativum Lam. (T. aestivum)

spelta L. (Spelt wheat) --- Hex. --- cult.

sphaerococcum Perc. (Shot wheat) --- Hex. --- cult.

thaoudar Reut. ex Hausskn. --- Dipl. --- southwestern Asia (Bowden 1959 included this in T. monococcum)

timopheevii (Zhuk.) Zhuk. --- Tetr. --- U.S.S.R.: Georgia

turanicum Jakubz. --- Tetr. --- cult.

turgidum L. (Poulard wheat, cone w., rivet w.) --- Tetr. --- cult.

vavilovii Jakubz. --- Hex. --- cult.

vulgare Vill. (T. aestivum)

zhukovskyi Men. & Er. --- Hex. --- U.S.S.R.: Georgia

X Tritordeum (Hordeum X Triticum)

MAIN WORKS CONSULTED

Bor, N. L.
1960. The Grasses of Burma, Ceylon, India and Pakistan. 767 pp. London.

_____
1968. Flora of Iraq. (C. C. Townsend et al., eds.). Vol. 9. Ministry of Agriculture, Republic of Iraq. 588 pp.

Bowden, W. M.
1959. The Taxonomy and nomenclature of the wheats, barleys and ryes and their wild relatives. Canad. Jour. Bot. 37: 657-684.

_____
1962. Cytotaxonomy of the native and adventive species of Hordeum, Eremopyrum, Secale, Sitanion and Triticum in Canada. Canad. Jour. Bot. 40: 1675-1711.

_____
1965. Cytotaxonomy of the species and interspecific hybrids of the genus Agropyron in Canada and neighboring areas. Canad. Jour. Bot. 43: 1421-1448.

Hitchcock, A. S.
1951. Manual of Grasses of the United States. Ed. 2, rev. by A. Chase. U.S. Dept. Agr. Misc. Pub. 200, 1041 pp.

Hubbard, C. E.
1968. Grasses -- A Guide to their Structure, Identification, Uses and Distribution in the British Isles. Rev. ed., Penguin Books. 463 pp. London.

Khush, G. S.
1962. Cytogentic and evolutionary studies in Secale. II. Inter-relationships of the wild species. Evolution 16: 484-496.

_____
1963. Cytogentic and evolutinary studies in Secale. III. Cytogentics of weedy ryes and origin of cultivated rye. Econ. Bot. 17: 60-71.

Komarov, V. L., ed.
1934. Flora of the U.S.S.R. Vol. 2. Natl. Sci. Found. 622 pp. (In English.)

Peterson, R. F.
1965. Wheat - Botany, Cultivation and Utilization. 421 pp. London.

Runemark, H., and Heneen, W. K.
1968. Elymus and Agropyron, a problem of generic delimitation. Bot. Notiser 121: 51-79.

Wilson, F. D.
1963. Revision of Sitanion (Triticeae, Gramineae). Brittonia 15: 303-323.